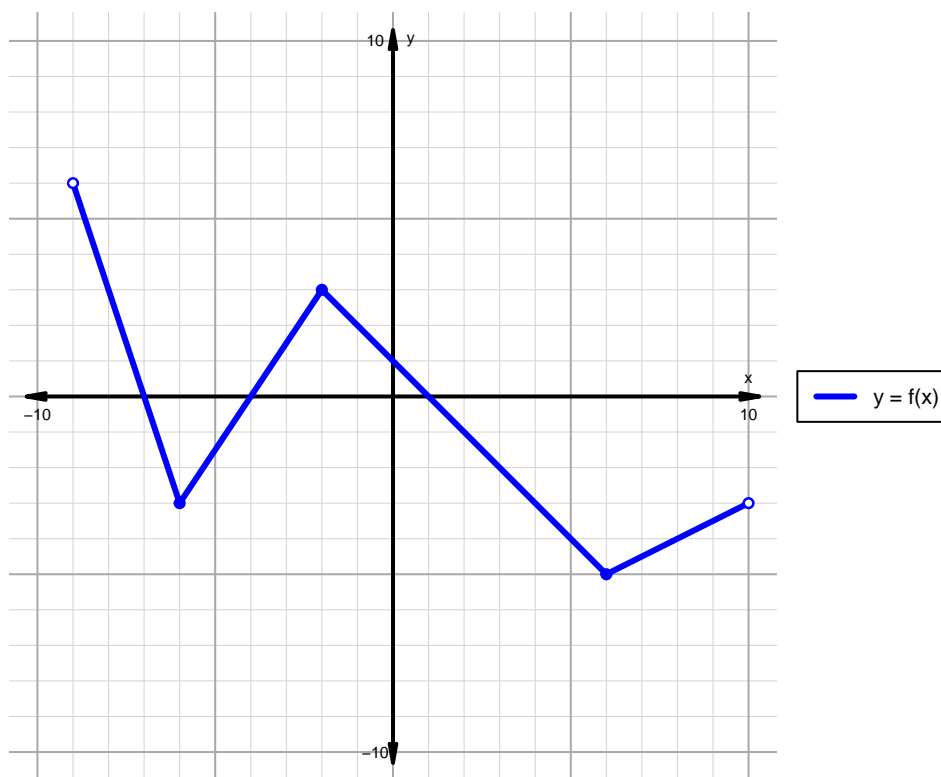


Name: \_\_\_\_\_

Date: \_\_\_\_\_

**Intervals, Transformations, and Slope Solution (version 43)**

1. The function  $f$  is graphed below.

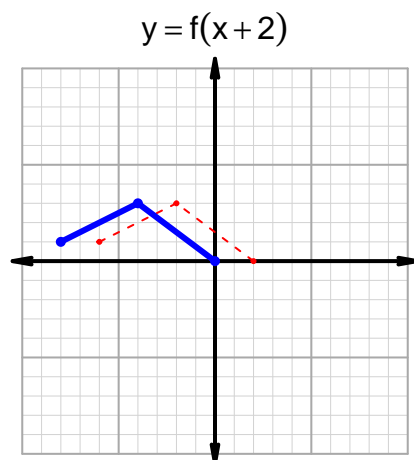
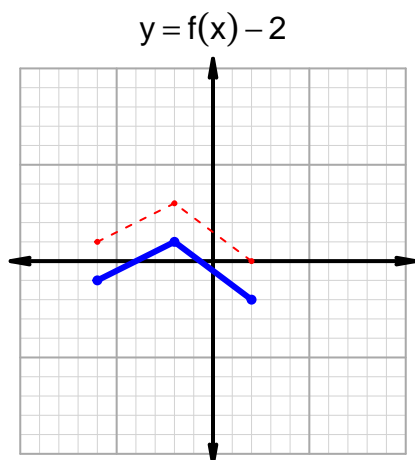
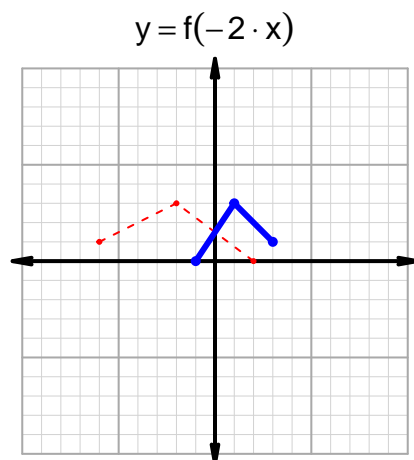
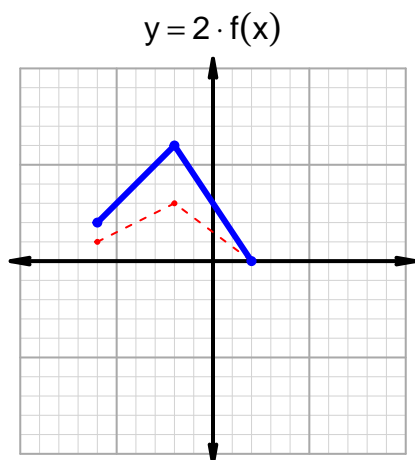


Indicate the following intervals using interval notation. Remember, you can use  $\cup$  between two intervals to indicate the union. Except for range, all intervals will indicate  $x$  values; this is standard.

Feature	Where
Positive	$(-9, -7) \cup (-4, 1)$
Negative	$(-7, -4) \cup (1, 10)$
Increasing	$(-6, -2) \cup (6, 10)$
Decreasing	$(-9, -6) \cup (-2, 6)$
Domain	$(-9, 10)$
Range	$(-5, 6)$

## Intervals, Transformations, and Slope Solution (version 43)

2. In the four graphs below,  $y = f(x)$  is graphed as a dotted line. With a solid line, please graph the transformations indicated by the equations below.



3. Let function  $g$  be defined by the table below. Use the formula  $\frac{g(x_2) - g(x_1)}{x_2 - x_1}$  to find the average rate of change between  $x_1 = 44$  and  $x_2 = 56$ . Express your answer as a reduced fraction.

$x$	$g(x)$
33	56
44	33
56	60
60	44

$$\frac{f(56) - f(44)}{56 - 44} = \frac{60 - 33}{56 - 44} = \frac{27}{12}$$

The greatest common factor of 27 and 12 is 3. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{9}{4}$$